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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/757,958

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Hiroshi Ogasawara

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EXAMINER

KIMBALL, MAKAYLA T

ART UNIT

PAPER NUMBER

2191

DATE MAILED: 10/10/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/757,958

Applicant(s)

OGASAWARA ET AL.

Examiner

Makayla Kimball

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 13 January 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8 and 11-22 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-8 and 11-22 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 13 January 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☒ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☒ Certified copies of the priority documents have been received in Application No. 10/757,958.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>01/13/2004 & 10/12/2004</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. Claims 1-20 are pending and are considered below.
2. Applicant needs to submit an English translation of foreign application: JAPAN 2003-011594.

Drawings

3. The drawings are objected to because in Figure 7 and Figure 8 number 118 were not described in the specification. Also in Figure 11 numbers 714 and 715 were not described in the specification. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

4. The disclosure is objected to because of the following informalities: The following words were not spelled out: On page 5, "LU", page 8, "MO" and page 29, "SVP".

Appropriate correction is required.

Double Patenting

5. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

6. Claims 1 and 2 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1, 7, 11 and 17 of copending Application No. 10/757957; claims 1, 3-5, 7, 10, 11, 13-15, 17 and 20 of copending Application No. 11/350484; claims 1, 3-5, 7, 10, 11, 13-15, 17 and 20 of copending application 11/010172 and claims 1, 7 and 10 of Patent 6,990,553.

This is a provisional obviousness-type double patenting rejection.

Initially it should be noted that the present application is related to pending Applications and current Patents having the same inventive entity. The Assignee for all Applications is Hitachi, Ltd. The entire disclosures of all Applications are identical.

Claim 1, of the instant application is compared to claim 1 of pending applications 10/757957, 11/350484 and 11/010172 and Patent 6,990,553.

Limitations in instant application (10/757958)	Limitations in pending application (10/757957)	Limitations in pending application (11/350484)	Limitations in pending application (11/010172)
<p>1. A method of installing software on a storage device controlling apparatus which includes:</p> <p><u>At least one</u> channel controller having a circuit board on which are formed a file access processing section receiving requests to input and output data in files as</p>	<p>1. A method of controlling a storage device controlling apparatus which includes:</p> <p><u>A plurality of</u> channel controllers having a circuit board on which are formed a file access processing section receiving requests to input and output data in files as</p>	<p>1. A method of controlling a storage device controlling apparatus which includes:</p> <p><u>A plurality of</u> channel controllers having a circuit board on which are formed a file access processing section receiving requests to input and output data in files as</p>	<p>1. A method of controlling a storage device controlling apparatus which includes:</p> <p><u>A plurality of</u> channel controllers <u>each</u> having a circuit board on which are formed a file access processing section receiving requests to input and output</p>

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units from an information processing apparatus via a <u>first</u> network and an I/O processor outputting I/O requests corresponding to said requests to input and output data to a storage device; At least one disk controller executing input and output of data into and from said storage device in response to the I/O requests sent from said I/O processor; and <u>A second network coupling said channel controller and said disk controller so as</u>	units from an information processing apparatus via network and an I/O processor outputting I/O requests corresponding to said requests to input and output data to a storage device, <u>said file access processing section further translating data associated with a received file access request to produce converted data which can be processed by said I/O processor and sending said converted data to said I/O processor</u> ; and A disk controller executing input and output of data into and	units from an information processing apparatus via network and an I/O processor outputting <u>to a storage device</u> I/O requests corresponding to said requests to input and output data; A disk controller executing input and output of data into and from said storage device in response to the I/O requests sent from said I/O processor; and <u>Which manages a memory area provided by said storage device in logical volumes, which are memory areas logically set on the memory area, said</u>	data in files as units from an information processing apparatus via a network and an I/O processor outputting <u>to a storage device</u> I/O requests corresponding to said requests to input and output data; and A disk controller executing input and output of data into and from said storage device in response to the I/O requests sent from said I/O processors, <u>and managing a memory area provided by said storage device in</u>
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<u>to be able to</u> <u>communicate with</u> <u>each other.</u> <u>Said method</u> <u>comprising:</u> <u>Writing software for</u> <u>enabling said file</u> <u>access processing</u> <u>section to function,</u> <u>said software being</u> <u>written into said</u> <u>storage device by</u> <u>communicating with</u> <u>said channel</u> <u>controller via said</u> <u>second network.</u>	<u>from said storage</u> <u>device in response to</u> <u>the I/O requests sent</u> <u>from said I/O</u> <u>processor; and</u> <u>Which manages a</u> <u>memory area provided</u> <u>by said storage device</u> <u>in logical volumes,</u> <u>which are memory</u> <u>areas logically set on</u> <u>the memory area, said</u> <u>method comprising the</u> <u>step of:</u> <u>Performing, by said</u> <u>disk controller, a</u> <u>replication</u> <u>management</u> <u>processing whereby</u> <u>data is also written into</u> <u>a second logical</u> <u>volume to store a copy</u> <u>of the data in the</u> <u>second logical volume.</u>	<u>method comprising the</u> <u>step of:</u> <u>Receiving, by at least</u> <u>one of said channel</u> <u>controllers, data</u> <u>specifying an</u> <u>assignment of logical</u> <u>volume to said channel</u> <u>controller, said data</u> <u>being sent from said</u> <u>information processing</u> <u>apparatus; and</u> <u>Storing said received</u> <u>assignment by said at</u> <u>least one channel</u> <u>controller</u>	<u>logical volumes,</u> <u>which are memory</u> <u>areas logically set on</u> <u>the memory area,</u> <u>said method</u> <u>comprising:</u> <u>Receiving, by at</u> <u>least one of said</u> <u>channel controllers,</u> <u>data specifying an</u> <u>assignment of logical</u> <u>volume to said</u> <u>channel controller,</u> <u>said data being sent</u> <u>from said information</u> <u>processing</u> <u>apparatus; and</u> <u>Storing said received</u> <u>assignment by said</u> <u>at least one channel</u> <u>controller</u>
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	<p><u>when said data is</u></p> <p><u>written into a first</u></p> <p><u>logical volume, wherein</u></p> <p><u>at least one of the</u></p> <p><u>channel controllers or</u></p> <p><u>the disk controller is</u></p> <p><u>configured to</u></p> <p><u>selectively perform:</u></p> <p><u>Copying data from a</u></p> <p><u>source logical unit (LU)</u></p> <p><u>to a destination LU on</u></p> <p><u>an LU basis; and</u></p> <p><u>Copying data from the</u></p> <p><u>source LU to the</u></p> <p><u>destination LU on a file</u></p> <p><u>basis.</u></p> <p><u>Wherein copying on an</u></p> <p><u>LU basis includes</u></p> <p><u>copying data from the</u></p> <p><u>source LU to the</u></p> <p><u>destination LU based</u></p> <p><u>on difference data</u></p> <p><u>indicative of differences</u></p> <p><u>between data stored on</u></p>		
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	<u>the source LU and data</u> <u>stored on the</u> <u>destination LU.</u> <u>Wherein copying on a</u> <u>file basis includes</u> <u>copying a subject file</u> <u>and metadata</u> <u>associated with the</u> <u>subject file to the</u> <u>destination LU</u>		
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Limitations in instant application (10/757958)	Limitations in Patent No. (6,990,553)
<p>1. A method of installing software on a storage device controlling apparatus which includes:</p> <p><u>At least one</u> channel controller having a circuit board on which are formed a file access processing section receiving requests to input and output data in files as units from an information processing apparatus via <u>a first</u> network and an I/O processor outputting I/O requests corresponding to said requests to input and output data to a storage device;</p> <p>At least one disk controller executing input and output of data into and from said storage device</p>	<p>1. A method of controlling a storage device controlling apparatus which includes:</p> <p><u>A plurality</u> of channel controllers having a circuit board on which are formed a file access processing section receiving requests to input and output data in files as units from an information processing apparatus <u>via a</u> network and an I/O processor outputting <u>to a storage device</u> I/O requests corresponding to said requests to input and output data; and</p> <p><u>A disk</u> controller executing input and output</p>

in response to the I/O requests sent from said I/O processor; and

A second network coupling said channel controller and said disk controller so as to be able to communicate with each other,

Said method comprising:

Writing software for enabling said file access processing section to function, said software being written into said storage device by communicating with said channel controller via said second network.

of data into and from said storage device in response to the I/O requests sent from said I/O processors, and managing a memory area provided by said storage device in logical volumes, which are memory areas logically set on the memory area, a plurality of the same logical volumes being assigned to each of the plurality of channel controllers, said plurality of channel controllers having stored in at least one of said plurality of the same logical volumes information that is necessary for a channel controller which has not failed to take over processing of the channel controller which has failed when failure occurs; said method comprising: receiving, by at least one of said channel controllers, data specifying an assignment of a logical volume to said channel controller, said data being sent from said information processing apparatus;
Storing said received assignment by said at least one channel controller; and
When one of said channel controllers fails, processing a read/write request from said

	<u>information processing apparatus by the</u> <u>channel controller which has not failed.</u>
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It would be obvious to add the limitations from instant application 10/757958, that are not shown in pending applications 10/757957, 11/350484, 11/010172 and Patent 6,990,553 because you will want to install software that will allow data storage, data access and controlling the storage device.

Claim Rejections - 35 USC § 112

7. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

8. Claim 14-17 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Claims 14 and 15 "microprogram" were not mentioned in the specification. Also, in claim 16 a "loader" and "installer" were not mentioned in the specification. Claim 17 is rejected for being dependent of claim 16.

Claim Rejections - 35 USC § 102

9. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

10. Claims 1-5, 7, 18, 20 and 22 are rejected under 35 U.S.C. 102(e) as being anticipated by Bourke-Dunphy et al (US PG PUB 2002/0133814).

For examination purposes the channel controller having a circuit board will be considered a processing unit, the disk controller will be considered an "interface" and the second network will be considered a "bus".

Claim 1:

A method of installing software on a storage device controlling apparatus which includes:

At least one channel controller having a circuit board [Figure 7, "304"] on which are formed a file access processing section receiving requests to input and output data in files as units from an information processing apparatus via a first network [0066, "A basic input/output system (BIOS), containing the basic routines that help to transfer information between elements within the computer 302, such as during start-up, is stored in ROM"] and an I/O processor outputting I/O requests corresponding to said requests to input and output data to a storage device. [0032, "appropriate executable code may be employed to extend the directory service to include a container for storing the data structure. Alternatively, the file may be stored in memory and subsequently transferred to the directory service 64 as part of a separate process, such as associated with installation of the components."]

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At least one disk controller executing input and output of data into and from said storage device in response to the I/O requests sent from said I/O processor; and [Figure 7, "324/326/328"]

A second network coupling said channel controller and said disk controller so as to be able to communicate with each other, [Figure 7, "308"]

Said method comprising:

Writing software for enabling said file access processing section to function, [0027, "a user or an application associated with the installation/setup may transfer the file to the directory service. By way of example, the user interface 12 may write the file to a directory service (e.g., a distributed directory) of a network domain."] said software being written into said storage device by communicating with said channel controller via said second network. [0064, "In a distributed computing environment, program modules may be located in both local and remote memory storage devices"]

Claim 2:

A method of installing software on a storage device controlling apparatus which includes:

At least one channel controller having a circuit board [Figure 7, "304"] on which are formed a file access processing section receiving requests to input and output data in files as units from an information processing apparatus via a first network [0066, "A basic input/output system (BIOS), containing the basic routines that help to transfer information between elements within the computer 302, such as during start-up, is stored in ROM"] and an I/O processor outputting I/O requests corresponding to said requests to input and output data to a storage device. [0032, "appropriate executable code may be employed to extend the directory service to include a container for storing the data structure. Alternatively, the file may be stored in memory and

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subsequently transferred to the directory service 64 as part of a separate process, such as associated with installation of the components.”]

At least one disk controller executing input and output of data into and from said storage device in response to the I/O requests sent from said I/O processor; and [Figure 7, “324/326/328”]

A second network coupling said channel controller and said disk controller so as to be able to communicate with each other, [Figure 7, “308”]

Said method comprising:

Writing a piece of firmware into each of nonvolatile memories provided for said channel controller and said disk controller via said second network. [0067, “The drives and their associated computer-readable media provide nonvolatile storage of data, data structures, computer-executable instructions, etc.”]

Claim 3:

A method of installing software on a storage device controlling apparatus according to claim 1, wherein a storage area for storing the software for enabling said file access processing section of said channel controller to function [0027, “a user or an application associated with the installation/setup may transfer the file to the directory service. By way of example, the user interface 12 may write the file to a directory service (e.g., a distributed directory) of a network domain.”] is assigned in said storage device. [0029, “which components to install and where such components are to be installed may be automatically set by default to correspond to the information stored in the data structure 20.”]

Claim 4:

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A method of installing software on a storage device controlling apparatus according to claim 1, wherein said software for enabling said file access processing section to function [0027, "a user or an application associated with the installation/setup may transfer the file to the directory service. By way of example, the user interface 12 may write the file to a directory service (e.g., a distributed directory) of a network domain."] is software for implementing a function of an operating system that provides a function of a file system. [0068, "A number of program modules may be stored in the drives and RAM 312, including an operating system 330"]

Claim 5:

A method of installing software on a storage device controlling apparatus according to claim 1, wherein said second network is coupled to a computer and said software is written from said computer into said storage device [0064, "In a distributed computing environment, program modules may be located in both local and remote memory storage devices."] by said channel controller communicating with said computer. [Figure 7, "360"; 0070, "the computer 302 may operate in a networked environment using logical connections to one or more other computers 360, such as may form part of a common network domain. The remote computer 360 may be a workstation, a server computer, a router, a peer device or other common network node, and typically includes many or all of the elements described relative to the computer 302."]

Claim 7:

A method of installing software on a storage device controlling apparatus according to claim 2, wherein said pieces of firmware are sent from a computer [0007, "The identified components may be selected for installation on one or more computers."] coupled to said second network to said channel controller and said disk controller. [Figure 7, "360"; 0070, "the computer 302 may

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operate in a networked environment using logical connections to one or more other computers 360, such as may form part of a common network domain. The remote computer 360 may be a workstation, a server computer, a router, a peer device or other common network node, and typically includes many or all of the elements described relative to the computer 302.”]

Claim 18:

A method of installing software on a storage device controlling apparatus according to claim 2, further comprising:

Writing software for enabling said file access processing section to function, [0027, “a user or an application associated with the installation/setup may transfer the file to the directory service. By way of example, the user interface 12 may write the file to a directory service (e.g., a distributed directory) of a network domain.”] said software being written into said storage device by communicating with said channel controller via said second network. [0064, “In a distributed computing environment, program modules may be located in both local and remote memory storage devices”]

Claim 20:

A method of installing software on a storage device controlling apparatus according to claim 1, wherein the at least one channel controller and the at least one disk controller are further connected by a connecting section to a memory via a high-speed bus. [Figure 7, “308”]

Claim 22:

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A method of installing software on a storage device controlling apparatus according to claim 2, wherein the at least one channel controller and the at least one disk controller are further connected by a connecting section to a memory via a high-speed bus. [Figure 7, "308"]

Claim Rejections - 35 USC § 103

11. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

12. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

13. Claims 6, 8, 11 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bourke-Dunphy et al (US PG PUB 2002/0133814) in view of Matsunami et al (US PG PUB 2003/0023665).

Claim 6:

Bourke-Dunphy discloses the method in claim 1 above. Bourke-Dunphy also discloses a computer to communicate with a channel controller [Figure 7, "360"; 0070, "the computer 302 may operate in a networked environment using logical connections to one or more other

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computers 360, such as may form part of a common network domain. The remote computer 360 may be a workstation, a server computer, a router, a peer device or other common network node, and typically includes many or all of the elements described relative to the computer 302.”] about what information is stored in the computer [0074, “The process proceeds to step 402 in which information is received about the computer (or computers) to which the installation relates.”]. However, Bourke-Dunphy does not disclose storing information about identifying channel controller to communicate with the computer. In the same area where problem is sought to be solved, Matsunami does disclose identifying a certain channel controller to communicate with a computer [Figure 6, “523”; 0086, “registered in the disk information management table 2022, 3022 as disk drive units that can be used by the respective controller, and thus uses those disk drive units 41. Each controller is therefore able to exclusively use selected disk drive units 41 in a single disk pool 4]. Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to incorporate information about a certain channel controller into Bourke-Dunphy, since Bourke-Dunphy already discloses a network of computers. One would have been motivated to incorporate identifying a certain channel controller so each controller will work directly with their own storage device.

Claim 8:

Bourke-Dunphy discloses the method in claim 2 above. Bourke-Dunphy also discloses a computer to communicate with a channel controller and disk controller [Figure 7, “360”; 0070, “the computer 302 may operate in a networked environment using logical connections to one or more other computers 360, such as may form part of a common network domain. The remote computer 360 may be a workstation, a server computer, a router, a peer device or other common network node, and typically includes many or all of the elements described relative to

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the computer 302.”] about what information is stored in the computer [0074, “The process proceeds to step 402 in which information is received about the computer (or computers) to which the installation relates.”]. However, Bourke-Dunphy does not disclose storing information about identifying channel controller nor identifying disk controller to communicate with the computer. In the same area where problem is sought to be solved, Matsunami does disclose identifying a certain channel controller and disk controller to communicate with a computer [Figure 6, “523”; 0086, “registered in the disk information management table 2022, 3022 as disk drive units that can be used by the respective controller, and thus uses those disk drive units 41. Each controller is therefore able to exclusively use selected disk drive units 41 in a single disk pool 4]. Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to incorporate information about a certain channel controller and disk controller into Bourke-Dunphy, since Bourke-Dunphy already discloses a network of computers. One would have been motivated to incorporate identifying a certain channel controller and disk controller so each controllers will work directly with their own storage device.

Claim 11:

Bourke-Dunphy discloses the method as in claim 1 above. Bourke-Dunphy also discloses software being written into the storage device [0064, “In a distributed computing environment, program modules may be located in both local and remote memory storage devices”]. However, Bourke-Dunphy does not disclose a storage system to function like a Network Attached Storage. In the same area where problem is sought to be solved, Matsunami does disclose a Network Attached Storage system [0012, “NAS system is created by the file server and the storage system connected to the file server by a fibre channel.”] Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to incorporate

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having the storage system function like a Network Attached Storage system into Bourke-Dunphy, since Bourke-Dunphy already discloses having a storage device. One would have been motivated to incorporate a storage system to function like a Network Attached Storage system because the Network Attached Storage system is directly connected to the LAN. Which will allow for low setup costs and relatively easy setup because of an existing LAN can be used.

Claim 13:

Bourke-Dunphy discloses the method as in claim 1 above. Bourke-Dunphy also discloses firmware being written into nonvolatile memories [0064, "In a distributed computing environment, program modules may be located in both local and remote memory storage devices"]. However, Bourke-Dunphy does not disclose a storage system to function like a Network Attached Storage. In the same area where problem is sought to be solved, Matsunami does disclose a Network Attached Storage system [0012, "NAS system is created by the file server and the storage system connected to the file server by a fibre channel."; 0037, "The storage 1 consists of a plurality of disk array controllers 20, a plurality of file servers 30, a plurality of disk drive units 41, a disk..."] Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to incorporate having the storage system function like a Network Attached Storage system into Bourke-Dunphy, since Bourke-Dunphy already discloses having a storage device. One would have been motivated to incorporate a storage system to function like a Network Attached Storage system because the Network Attached Storage system is directly connected to the LAN. Which will allow for low setup costs and relatively easy setup because of an existing LAN can be used.

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14. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bourke-Dunphy et al (US PG PUB 2002/0133814) in view of Collins et al (US PG PUB 2002/0188733).

Claim 12:

Bourke-Dunphy discloses the method as in claim 1 above. However, Bourke-Dunphy does not disclose a Network Attached Storage with an operating system. In the same area where problem is sought to be solved, Collins does disclose a Network Attached Storage with an operating system [0021, "integral with the operating system of the NAS device 20..."] Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to incorporate having an operating system for a Network Attached Storage into Bourke-Dunphy, since Bourke-Dunphy already discloses having a storage device. One would have been motivated to incorporate an operating system into the Network Attached Storage because you will want to store it.

15. Claims 14 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bourke-Dunphy et al (US PG PUB 2002/0133814) in view of Fisher et al (Patent 5,367,686).

Claim 14:

Bourke-Dunphy discloses the method as in claim 1 above. However, Bourke-Dunphy does not disclose a microprogram for controlling the I/O processor. In the same field of endeavor, Fisher does disclose a microcode for the I/O processor. [Column 3, lines 51-55 "Multiple function I/O processor 16 is preferably implemented utilizing a combination of hardware and microcode to provide a combination of service processor...in a single one-card I/O processor."] Therefore it

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would have been obvious to a person of ordinary skill in the art at the time the invention was made to incorporate having the microcode in the I/O processor into Bourke-Dunphy, since Bourke-Dunphy already discloses installing software on a computer. One would have been motivated to incorporate microcode because it reduces the cost of field changes to correct defects in the processor; a bug could often be fixed by replacing a portion of the microprogram rather than by changes being made to hardware logic and wiring.

Claim 15:

Bourke-Dunphy discloses the method as in claim 2 above. However, Bourke-Dunphy does not disclose a microprogram for controlling the CPU. In the same field of endeavor, Fisher does disclose a microcode for the I/O processor. [Column 3, lines 51-55 "Multiple function I/O processor 16 is preferably implemented utilizing a combination of hardware and microcode to provide a combination of service processor...in a single one-card I/O processor."] Therefore it would have been obvious to a person of ordinary skill in the art at the time the invention was made to incorporate having the microcode in the I/O processor into Bourke-Dunphy, since Bourke-Dunphy already discloses installing software on a computer. One would have been motivated to incorporate microcode because it reduces the cost of field changes to correct defects in the processor; a bug could often be fixed by replacing a portion of the microprogram rather than by changes being made to hardware logic and wiring.

16. Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bourke-Dunphy et al (US PG PUB 2002/0133814) in view of Schwartz et al (US PG PUB 2004/0088697).

Claim 16:

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Bourke-Dunphy discloses the method as in claim 2 above. However, Bourke-Dunphy does not disclose a loader and installer to install an operating system. In the same area where problem is sought to be solved. Schwartz does disclose a loader and installer to install an operating system [0014, "System 10 is preferably operable to automatically load and install a secure operating system (OS)..."] Therefore it would have been obvious to a person of ordinary skill in the art at the time the invention was made to incorporate having a loader and installer into Bourke-Dunphy, since Bourke-Dunphy already discloses an operating system stored in a storage device. One would have been motivated to incorporate a loader and installer so you don't have to do the program yourself, the program can handle it.

Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bourke-Dunphy et al (US PG PUB 2002/0133814) in view of Schwartz et al (US PG PUB 2004/0088697) as applied to claim 16 above, and further in view of Hiew et al (PG PUB 2005/0229154).

Claim 17:

Bourke-Dunphy and Schwartz disclose the method as in claim 16 above. However, Bourke-Dunphy does not disclose a Network Attached Storage with an operating system. In the same area where problem is sought to be solved, Collins does disclose a Network Attached Storage with an operating system [0021, "integral with the operating system of the NAS device 20..."] Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to incorporate having an operating system for a Network Attached Storage into Bourke-Dunphy, since Bourke-Dunphy already discloses having a storage device. One would have been motivated to incorporate an operating system into the Network Attached Storage because you will want to store it.

17. Claims 19 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bourke-Dunphy et al (US PG PUB 2002/0133814) in view of Shatil et al (Patent 6,665,703).

Claim 19:

Bourke-Dunphy discloses the method as in claim 1 above. However, Bourke-Dunphy does not disclose an internal LAN in the storage device controlling apparatus. In the same area where problem is sought to be solved, Shatil does disclose an internal LAN in the storage device [Column 2, lines 21 & 22, "a storage system is provided which includes an internal local area network."]. Therefore it would have been obvious to a person of ordinary skill in the art at the time the invention was made to incorporate having an internal LAN in the storage device into Bourke-Dunphy, since Bourke-Dunphy already discloses a storage device. One would have been motivated to incorporate an internal LAN because it includes a significant decrease in the amount of time that is required for such things as software upgrades.

Claim 21:

Bourke-Dunphy discloses the method as in claim 2 above. However, Bourke-Dunphy does not disclose an internal LAN in the storage device controlling apparatus. In the same area where problem is sought to be solved, Shatil does disclose an internal LAN in the storage device [Column 2, lines 21 & 22, "a storage system is provided which includes an internal local area network."]. Therefore it would have been obvious to a person of ordinary skill in the art at the time the invention was made to incorporate having an internal LAN in the storage device into Bourke-Dunphy, since Bourke-Dunphy already discloses a storage device. One would have

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been motivated to incorporate an internal LAN because it includes a significant decrease in the amount of time that is required for such things as software upgrades.

Conclusion

18. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Kitamura et al (US PGPUB 2003/0088683) – discloses a storage management computer.

Falkner (Patent 7,111,055) – discloses software installation on remote computers over a network.

Yadav (Patent 6,795,965) – discloses a multi-source program module.

Chrin et al (Patent 6,782,389) – discloses distributing files across multiple storage devices.

Murotani et al (US PGPUB 2003/0233502) – discloses a method and apparatus for a storage system.

“Network-Attached Storage Systems” – discloses a Network Attached Storage system.

“Network Attached Storage Architecture” – discloses a Network Attached Storage device.

19. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Makayla Kimball whose telephone number is 571-270-1057. The examiner can normally be reached on Monday - Thursday 8AM - 2PM EST.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wei Zhen can be reached on 571-272-3708. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

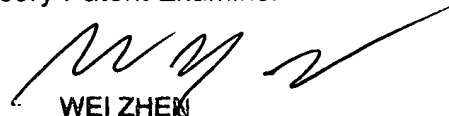
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MTK

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09/27/2006

Wei Y Zhen
Supervisory Patent Examiner



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SUPERVISORY PATENT EXAMINER